CPI was applied to patients in the Endovascular Aneurysm Repair (EVAR) I and II trials. The effect of fitness and type of AA repair was determined with respect to elective 30-day mortality and 4-year survival.

The mean (SD) CPI scores were 3.6 (9.3) for 1252 EVAR I patients and 10.0 (11.3) for 404 EVAR II patients; range –25 to ±43 ($P < .001$). Of these, 579 EVAR I patients were classified as good fitness (mean CPI, –4.2), 331 were classified as moderate fitness (mean CPI, 5.7), and 338 patients were classified as poor fitness (mean CPI, 15.1). Only in the good fitness group did 30-day mortality convincingly favor endovascular repair (odds ratio, 0.24; $P = .030$). The overall test of interaction was not significant ($P = .363$). For 4-year all-cause and aneurysm-related mortality, there was no benefit for either treatment across all fitness scores ($P = .281$ and $P = .371$ respectively).

Comment: It is a little surprising and somewhat counterintuitive that sustained benefit for aneurysm-related mortality in EVAR patients was most convincing in the fittest patients. However, the number of deaths ≤30 days in the EVAR patients (10 of 610) and patients undergoing open repair (25 of 596) was small. This makes precise and dogmatic interpretation of the data somewhat difficult. However, as the authors point out, the data certainly do not allow one to conclude that fitter patients benefit from open surgery compared with EVAR. In fact, the opposite may be true.

Final Twelfth-Year Follow-up of Surgery vs Surveillance in the UK Small Aneurysm Trial

UK Small Aneurysm Trial Participants. Br J Surg 2007;94:702-8.

Conclusion: There is no long-term survival benefit of early elective open repair of small abdominal aortic aneurysms (AAAs). Patients still have higher mortality rates after successful AAA repair than the general population.

Summary: This represents the final follow-up of the UK Small Aneurysm Trial. The trial was designed to determine whether early open surgical repair benefited patients with small AAAs. The UK Small Aneurysm Trial randomized 1276 patients between the ages of 60 and 76 years who were considered fit for surgery to immediate repair of an infrarenal AAA between 4.0 and 5.5 cm or ultrasound surveillance. Aneurysms in the surveillance group were repaired once they reached a diameter >5.5 cm, became symptomatic, or demonstrated a worrisome growth rate.

Of the 1276 patients identified and potentially eligible for the study, 1090 patients were enrolled between 1991 and 1995. They were followed up for aneurysm repair and mortality until November 2005. By November 2005, 65.5% of the patients (n = 714) had died, 85.2% had undergone aneurysm repair, 13.8% (n = 150) died without aneurysm repair, and 1% were still alive without aneurysm repair. Overall mortality was 63.9% in the surgery group and 67.3% in the surveillance group (unadjusted hazard ratio, 0.90; $P = .139$). Three-fourths of the patients in the surveillance group eventually had aneurysm repair. The 30-day mortality rate for elective repair was 6.3% in the surveillance group and 5.0% in the early surgery group ($P = .366$). Cost estimates suggest a 17% higher cost in the early surgery group. The death rate of patients in the UK Small Aneurysm Trial was about twice that of the population matched for age and sex.

Comment: The UK Small Aneurysm Trial and others had already proven that early open repair of small AAAs has no early survival benefit. There is now clearly no late survival benefit, either. Given the high rate of mortality in AAA patients compared with the general population, perhaps the greatest benefit of AAA screening will be the identification of another group of patients who should be targeted for vigorous cardiovascular risk-factor reduction.

Outcome Following Bypass and Proximal and Distal Ligation of Popliteal Aneurysms

Box B, Adamson M, Magee TR. Br J Surg 2007;94:179-82.

Conclusion: Treatment of popliteal aneurysms with proximal and distal ligation and intervening bypass produces excellent long-term patency and exclusion of the popliteal aneurysm.

Summary: Ligation of popliteal aneurysms should exclude them from the circulation. Recent studies have suggested, however, that one-third of popliteal aneurysms treated by bypass and ligation/exclusion can develop or retain flow after operation (J Vasc Surg 2003;37:958-59, Br J Surg 2004; 91:174-7). Nevertheless, proximal and distal ligation and bypass have remained the standard for treatment of popliteal aneurysms.

The authors identified 116 patients with popliteal aneurysms, 66 of whom were treated with bypass and ligation. Postoperative graft patency was determined by duplex surveillance. Seventeen patients with bypassed popliteal arteries underwent 33 duplex scans to examine for persistent flow within the aneurysm sac and an increase in size of the popliteal aneurysm.

When the popliteal artery was patent preoperatively, 3-, 5-, and 8-year primary patency rates for bypass grafting were 78%, 78%, and 51%, respectively. The rates did not differ from those obtained after bypass for thrombosed popliteal aneurysms, with 3- and 5-year primary patency being 72% and 65%. In this study, no popliteal aneurysm produced further symptoms after bypass and ligation. Duplex imaging did not reveal any flow in any bypassed and excluded popliteal aneurysm during follow-up. One aneurysm did show an increase in size.

Comment: The authors' data contrast with recent studies suggesting residual flow within the popliteal aneurysm and aneurysm growth in some patients after proximal and distal ligation and intervening bypass for popliteal aneurysm. It is unclear why their observations differ from other recent studies. The authors suggest that the proximal and distal sites of ligation be as close as possible to the popliteal aneurysm. Only a few of their patients received follow-up imaging; therefore, the true incidence of maintained patency of the popliteal aneurysm cannot be determined. The authors reported no residual symptoms in their patients, however, and one can argue follow-up imaging of the popliteal artery after repair of the aneurysm is unnecessary if the patient is asymptomatic.

Inflammatory Abdominal Aortic Aneurysm: Predictors of Long-Term Outcome in a Case-Control Study

Yusuf K, Murat B, Unal A, et al. Surgery 2007;141:83-9.

Conclusion: Persistent signs of inflammation after repair of an inflammatory abdominal aortic aneurysm (IAAA), with or without retroperitoneal fibrosis, place a patient with IAAA at high risk for poor, long-term outcome.

Summary: The authors sought to determine which features play a role in determining long-term outcome in patients with IAAA. IAAA was present in 17 of 238 patients (7.1%) who were operated for AAA from 1990 to 1997 at the authors' institution. The patients with IAAA were matched with a group of 35 patients with noninflammatory AAAs for age, gender, and preoperative risk factors. Risk-factor analysis was determined for poor outcome in the patients with IAAA vs those with noninflammatory AAA.

Operations were performed through a midline incision. Clinical characteristics and preoperative risk factors in the patients with AAA vs those with IAAA were not significantly different. All patients with IAAA were symptomatic. Patients with IAAA had larger aneurysms compared with those with noninflammatory AAA (8.2 ± 1.2 cm vs 6.1 ± 0.4 cm, $P = .04$). The preoperative erythrocyte sedimentation rate was elevated in the patients with IAAA compared with those with noninflammatory AAA (mean, 48 ± 14 mm/h vs 8 ± 3 mm/h, $P = .01$). There was no difference in surgical morbidity, mortality, intensive care unit, or hospital stay in the inflammatory vs the noninflammatory AAA groups. Survival at 8 years was worse in the inflammatory vs noninflammatory AAA group (60% vs 74%, $P = .01$). A high sedimentation rate after surgical intervention ($P = .02$), presence of cardiovascular disease ($P = .01$), and postoperative chronic renal failure ($P = .02$) were all independent risk factors for death in the IAAA group. No other variables analyzed were statistically positive for adversely affecting long-term mortality.

Comment: The two interesting features of this report are, first of all, that despite similar preoperative morbidity and mortality, long-term mortality in patients with IAAA appears to be greater than that of patients with noninflammatory AAA, and this mortality is associated with signs of persisting inflammation. Closer postoperative follow-up may be warranted in patients with IAAA treated by open surgical reconstruction than for patients treated for noninflammatory AAA.

Comparison of Risk-Adjusted 30-Day Postoperative Mortality and Morbidity in Department of Veterans Affairs Hospitals and Selected University Medical Centers: Vascular Surgical Operations in Men

Hutter MM, Lancaster RT, Henderson WG, et al. J Am Coll Surg 2007; 204:1115-26.

Conclusion: Risk-adjusted 30-day morbidity for vascular surgical operations in men is lower in Veterans Affairs (VA) hospitals compared with the private sector. There is no difference in risk-adjusted mortality rates between the two types of institution.

Summary: A congressional mandate required risk-adjusted surgical outcomes in Department of Veterans Affairs hospitals to be compared with those of private sector hospitals. In this regard, the National Surgical Quality Improvement Program (NSQIP) was initiated in the VA system and then extended to a group of university medical centers in the private sector. The authors performed a risk-adjusted outcome analysis of vascular surgical operations performed in men in VA hospitals compared with the university private sector medical centers. The study design was a prospective cohort study of vascular surgical operations in men from 128 VA medical centers compared with 14 university medical centers. Procedures were performed between October 1, 2001, and September 30, 2004. The study compared patient and operative characteristics and unadjusted and adjusted 30-day morbidity and mortality.